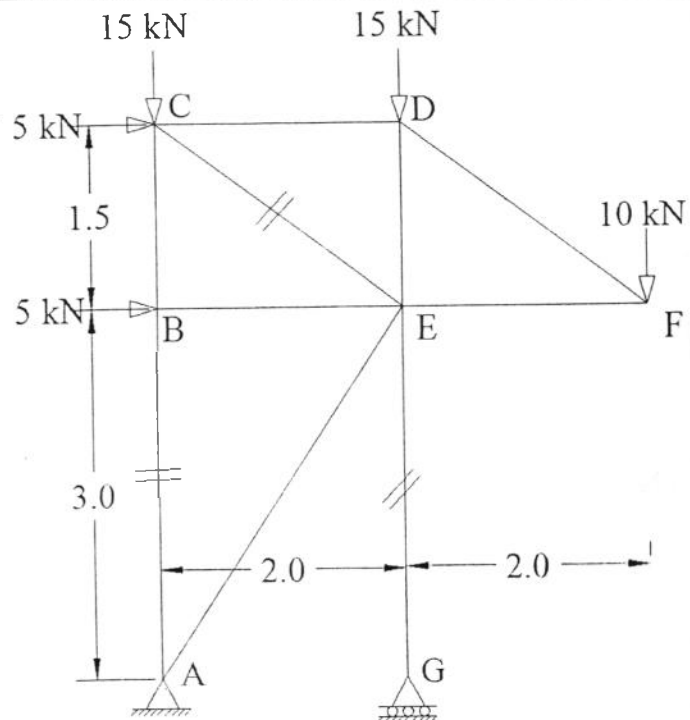




Final exam (2015/2016)

Q1): For the truss shown in **Figure (1)**, determine the force members **AB**, **CE** and **EG**. (All dimensions are in meter)



[25 marks]

Figure 1

Q2): The indicated force-couple system is applied to a small shaft at the center of the rectangular plate as shown in **Figure 2**. Replace this system by a single force and specify the coordinate of the point on the **y-axis** through which the line of action of this resultant force passes.

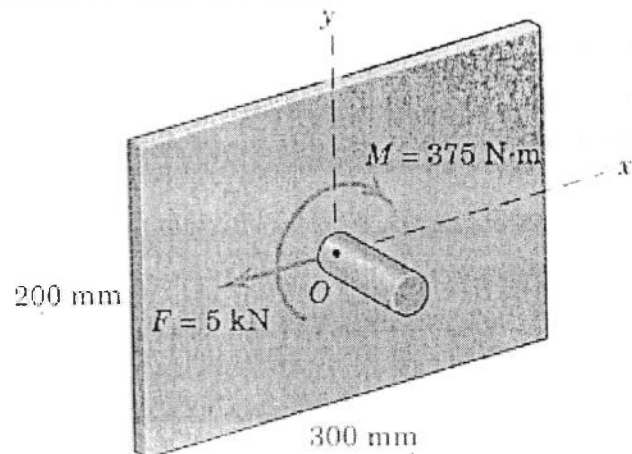


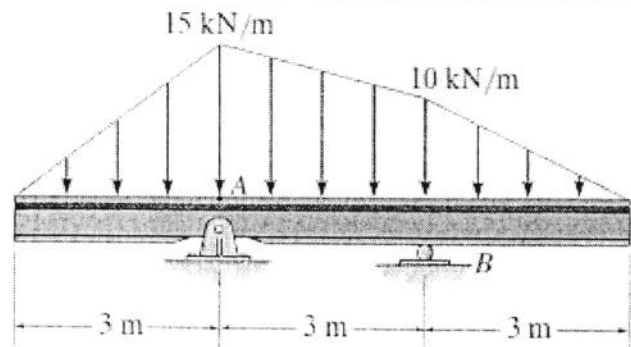
Figure 2

[25 marks]



Final exam (2015/2016)

Q3): For the beam shown in **Figure (3)**, find all reactions at supports **A** and **B**.



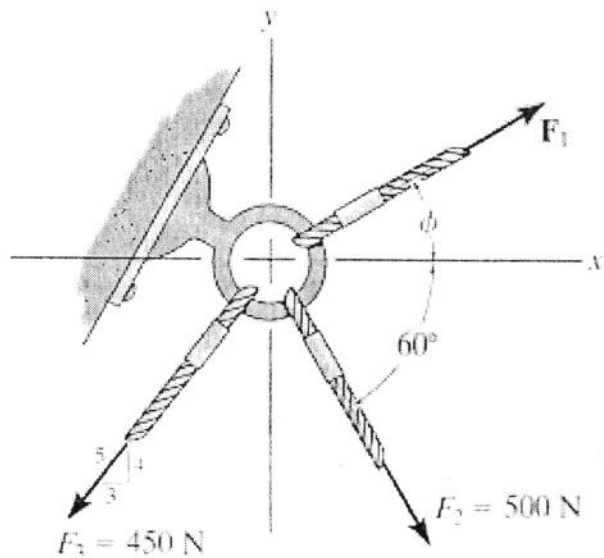
[25 marks]

Figure 3

Q4): For **Figure 4**, Answer one only:

A): If $F_1 = 600 \text{ N}$ and $\theta = 30^\circ$, determine the magnitude of the resultant force acting on the eyebolt and its direction measured clockwise from the positive x axis.

B): If the magnitude of the resultant force acting on the eyebolt is 600 N and its direction measured clockwise from the positive x axis is $\theta = 30^\circ$, determine the magnitude of F_1 and the angle θ .



[25 marks]

Figure 4

Good luck

Head of department

Dr. Jalal T. S. Al-Obaedi

Examiner

Labeel S.H. Alyassri